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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,297	12/15/2000	Satoshi Segawa	Q62305	8432

7590 12/12/2005

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EXAMINER	
THOMPSON, JAMES A	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/736,297	SEGAWA ET AL.	
	Examiner	Art Unit	
	James A. Thompson	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2005 and 16 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 September 2005 has been entered.

Response to Arguments

2. Firstly, regarding page 7, lines 5-10, a signed and initialed copy of the Information Disclosure filed on 13 February 2001 was included with the advisory action, dated 07 July 2005.

3. Applicant's arguments, see page 7, lines 12-15, filed 13 September 2005, with respect to the rejections of claim 15 and 16 under 35 USC §112, 2nd paragraph, have been fully considered and are persuasive. The rejections of claim 15 and 16 under 35 USC §112, 2nd paragraph listed in items 2-3 of the office action dated 11 March 2005 have been withdrawn.

4. Applicant's arguments filed 13 September 2005 have been fully considered but they are not persuasive. Examiner agrees with Applicant that the present amendments to the claims overcome the prior art rejections given in the previous office action, dated 11 March 2005. However, additional prior art has

been discovered which renders the present claims obvious to one of ordinary skill in the art at the time of the invention. The prior art rejections are given in detail below. The new grounds of rejection have been necessitated by the present amendments to the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima (US Patent 4,926,253) in view of Ide (US Patent 5,841,899), Dial (US Patent 5,537,211), and Matsuda (US Patent 5,705,806).

Regarding claim 1: Nakashima discloses an image scanner (figure 1 of Nakashima) comprising an exclusive light source portion (figure 1(1,2,7) of Nakashima) for illuminating an original as an object to be scanned (column 3, lines 61-64 of Nakashima) with light within at least a specific wavelength band (column 3, lines 64-67 of Nakashima). The LED array (figure 1 (1) of Nakashima) emits light within particular spectral characteristics (column 3, lines 64-67 of Nakashima), and thus light within al least a specific wavelength band.

Nakashima further discloses a scanning portion (figure 1(5-13) of Nakashima) for detecting reflected light from the

original to scan an original image (column 3, line 67 to column 4, line 4 of Nakashima), said scanning portion is arranged so as to be apart from said exclusive light source portion and the original, as is clearly shown in figure 1 of Nakashima. Both the scanning portion (figure 1(5-13) of Nakashima) and the exclusive light source portion (figure 1(1,2,7) of Nakashima) are arranged in separate sections of the image scanner (figure 1 of Nakashima).

Nakashima further discloses that said scanning portion performs binary processing so as to regard a portion of the original where detection value of reflected light intensity is higher than a reference value as white color while regard a portion of the original where the detection value of the reflected light intensity is smaller than the reference value as black color (figure 4a and column 7, lines 2-6 of Nakashima).

Nakashima does not disclose expressly that said image scanner is a stand type image scanner; and a means for selecting the specific wavelength band, said specific wavelength band being coexistive with or within a wavelength band of a portion of the original to be dropped out, said specific wavelength band being selected based on detected wavelength reflectivity characteristics of the original such that the reflectivity at said wavelength band of the portion to be dropped out is high.

Ide discloses a means (figure 1A(31) of Ide) for selecting a specific wavelength band (figure 3("RED DROP-OUT IMAGE: D_{RORG}") and column 5, lines 7-13 of Ide), said specific wavelength band being coexistive with or within a wavelength band of a portion of the original to be dropped out (figure 3 and figure 4 of Ide), whereby the reflectivity at said wavelength band of the portion to be dropped out (column 4, lines 11-18 of Ide) is

high. The red field elimination image production unit (figure 1A(31) of Ide) selects for drop-out and eliminates the wavelength band corresponding to the red drop-out image (column 5, lines 7-13 of Ide). An example of the wavelength band for the red drop-out image is shown in figure 3 of Ide under the label "D_{RORG}" and, after displacement correction (column 5, lines 1-6 of Ide), in figure 4 of Ide under the label "D_{RNEW}". Since said drop-out color is with or within a wavelength band of the portion to be dropped out (figure 3 and figure 4 of Ide), the reflectivity of said portion is high compared with an unspecific wavelength band. As is old and well known in the art, a portion of an image with a specific wavelength band reflects less light the further away the frequency of said light is from said specific wavelength band. Therefore, an unspecific wavelength band will have a lower reflectivity than said specific wavelength band of said portion on account of the frequency portions that are distant from said specific wavelength band.

Nakashima and Ide are combinable because they are from the same field of endeavor, namely image scanning and image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the means for selecting a specific wavelength band in order to process a drop-out color, as taught by Ide. The motivation for doing so would have been to pick up an image of an object having a specific color (column 1, lines 61-63 of Ide). Therefore, it would have been obvious to combine Ide with Nakashima.

Nakashima in view of Ide does not disclose expressly that said image scanner is a stand type image scanner; and that said specific wavelength band is selected based on detected wavelength reflectivity characteristics of the original.

Dial discloses selecting a specific wavelength band based on the detected wavelength reflectivity characteristics of the original medium (column 10, lines 18-25 of Dial).

Nakashima in view of Ide is combinable with Dial because they are from similar problem solving areas, namely selectively setting filters based on the physical medium that is optically scanned. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to filter the light, and thus select the specific wavelength band, as taught by Ide, based on the detected wavelength reflectivity characteristics of the original medium, as taught by Dial, said original medium being the original document taught by Nakashima in view of Ide. The motivation for doing so would have been to obtain a useful match of colors for the optical processing that is performed (column 10, lines 22-25 of Dial). Therefore, it would have been obvious to combine Dial with Nakashima in view of Ide.

Nakashima in view of Ide and Dial does not disclose expressly that said image scanner is a stand type image scanner.

Matsuda discloses a stand type image scanner (figure 1 and column 3, lines 13-15 of Matsuda). The image scanner shown in figure 1 of Matsuda is obviously a stand type image scanner.

Nakashima in view of Ide and Dial is combinable with Matsuda because they are from the same field of endeavor, namely image scanning and image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to embody the image scanner of Nakashima in view of Ide and Dial as a stand type image scanner taught by Matsuda. The motivation for doing so would have been to be able to read non-flat or spatially curved image sources, such as

books (column 1, lines 9-13 of Matsuda). Therefore, it would have been obvious to combine Matsuda with Nakashima in view of Ide and Dial to obtain the invention as specified in claim 1.

Regarding claim 2: Nakashima does not disclose expressly that said scanning portion sets the reference value to a value smaller than the detection value of the reflected light intensity from the portion to be dropped out when the binary processing is carried out.

Ide discloses that said scanning portion sets the reference value (threshold level) to a value smaller than the detection value of the reflected light intensity from the portion to be dropped out (D_{RNEW}) when the binary processing is carried out (column 6, lines 9-10 and lines 15-18 of Ide).

Nakashima and Ide are combinable because they are from the same field of endeavor, namely image scanning and image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to set the threshold value to the drop-out image level minus an offset, as taught by Ide. The motivation for doing so would have been to be able to perform a detailed comparison of the drop-out image with the non-drop-out image (column 6, lines 6-8 of Ide). Therefore, it would have been obvious to combine Ide with Nakashima to obtain the invention as specified in claim 2.

Regarding claim 3: Nakashima discloses that a higher signal level is obtained in the case of illumination with both the fluorescent lamp and the LED array due to the absorption of the red light component, than in the case of illumination with the fluorescent lamp alone (column 7, lines 34-41 of Nakashima). Therefore, the reflectivity of the specific wavelength band corresponding to the red LED of the LED array is higher than the

reflectivity of the image when only the fluorescent lamp is used.

Nakashima does not disclose expressly that the specific wavelength band is set to a wavelength band where the reflectivity of the portion to be dropped out is higher than that of a portion not to be dropped out.

Ide discloses that the specific wavelength band for the portion to be dropped out is set to the red wavelength band (column 4, lines 18-22 of Ide) and the non-dropped-out wavelength band is unspecific since all portions, including the drop-out portion, are picked up (column 4, lines 21-23 of Ide).

Nakashima and Ide are combinable because they are from the same field of endeavor, namely image scanning and image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to set the specific wavelength band of the drop-out color, as taught by Ide, to the color with the higher reflectivity, as taught by Nakashima. The motivation for doing so would have been to be able to recognize particularly printed frames (column 4, lines 12-19 of Ide). Therefore, it would have been obvious to combine Ide with Nakashima to obtain the invention as specified in claim 3.

Regarding claim 4: Nakashima does not disclose expressly that the reference value is set to a value higher than the detection value of the reflected light intensity from the portion not to be dropped out.

Ide discloses that the reference value (threshold level) is set to a value higher than the detection value of the reflected light intensity from the portion not to be dropped out (figure 8; and column 9, lines 27-30 and lines 33-37 of Ide).

Nakashima and Ide are combinable because they are from the same field of endeavor, namely image scanning and image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to set the threshold level to a value higher than the detection value of the reflected light intensity from the portion not to be dropped out. The motivation for doing so would have been to prevent erroneous recognition of the dropped-out portion (column 9, lines 43-49 of Ide). Therefore, it would have been obvious to combine Ide with Nakashima to obtain the invention as specified in claim 4.

Regarding claim 5: Nakashima discloses that said scanning portion records as an offset value the detection value of the reflected light intensity when environmental light (fluorescent lamp) is applied to the original (figure 5; column 4, lines 11-18 of Nakashima). There is an offset between the amount of reflected light when a fluorescent lamp (figure 1(1) of Nakashima) is used and the amount of reflected light when both said fluorescent lamp and the LED array (figure 1(2) of Nakashima) are used (figure 5 and column 7, lines 34-41 of Nakashima), which is calculated by the light quantity ratio detecting circuit (figure 1(12) of Nakashima) (column 4, lines 11-18 of Nakashima).

Nakashima further discloses a residual detection value (R') (column 7, lines 34-41 of Nakashima) obtained by subtracting the offset value from the detection value of the reflected light intensity when the light of the exclusive light source is applied (figure 5 and column 7, lines 42-51 of Nakashima). There is a difference in the signal level obtained through illumination by the fluorescent lamp and the LED array and the

signal level obtained through illumination by the fluorescent lamp alone (column 7, lines 34-41 of Nakashima). This difference is used to separate the colors by using the different signal level curves and establishing a threshold for said curves (figure 5 and column 7, lines 42-51 of Nakashima).

Nakashima further discloses that, with respect to said residual detection value (figure 4b and column 7, lines 15-19 of Nakashima), said scanning portion performs binary processing of regarding as white color a portion of the original at which the residual detection value is higher than a reference value and regarding as black color a portion of the original at which the residual detection value is smaller than the reference value (figure 4b and column 7, lines 2-6 of Nakashima).

Regarding claim 6: Nakashima discloses that said scanning portion sets the reference value (threshold level V_{TH}) to a value smaller than the residual detection value (figure 4b; and column 7, lines 6-8 and lines 15-19 of Nakashima). As can be seen in figure 4b of Nakashima, the threshold value (V_{TH}) is lower than the residual detection value (R').

Regarding claim 7: Nakashima does not disclose expressly that said exclusive light source portion has an optical filter for selectively transmitting light in the specific wavelength band, and the light transmitted through said optical filter is applied as the light of said exclusive light source.

Ide discloses using an optical filter for selectively transmitting light in the specific wavelength band, and the light transmitted through said optical filter is applied as the light of said exclusive light source (column 5, lines 24-28 of Ide).

Nakashima and Ide are combinable because they are from the same field of endeavor, namely image scanning and image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an optical filter to transmit the specific wave band from said exclusive light source. The motivation for doing so would have been to transmit only the color required to pick up the drop-out portion (column 5, lines 22-24 of Ide). Therefore, it would have been obvious to combine Ide with Nakashima to obtain the invention as specified in claim 7.

Regarding claim 8: Nakashima discloses that said scanning portion detects the reflected light intensity of the specific wavelength band as the detection value (figures 4a-4b and column 7, lines 15-19 of Nakashima). When red LED illumination is added to the illumination provided by the fluorescent lamp (column 7, lines 15-17 of Nakashima), the red level is detected as being higher than when only the fluorescent lamp is used (figures 4a-4b and column 7, lines 17-19 of Nakashima).

Regarding claim 9: Nakashima does not disclose expressly that said scanning portion has an optical filter for selectively transmitting light in the specific wavelength band, and the intensity of the light transmitted through said optical filter is detected as the detection value.

Ide discloses an optical filter for selectively transmitting light in the specific wavelength band (column 5, lines 21-24 of Ide), and the intensity of the light transmitted through said optical filter is detected as the detection value (column 5, lines 38-41 of Ide).

Nakashima and Ide are combinable because they are from the same field of endeavor, namely image scanning and image data

processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an optical filter to filter the light being transmitted into the image detection device (such as a CCD camera). The motivation for doing so would have been to transmit only the color required to pick up the drop-out portion (column 5, lines 22-24 of Ide). Therefore, it would have been obvious to combine Ide with Nakashima to obtain the invention as specified in claim 9.

Regarding claims 11 and 13: Nakashima discloses that the light intensity of the specific wavelength band (red LED) is higher than a light intensity of the exclusive light source in an unspecific wavelength band (red LED with fluorescent lamp) (figure 4a; figure 4b; and column 7, lines 15-19 of Nakashima).

Further regarding claim 12: Ide teaches that said means for selecting the specific wavelength band replaces the pixel values of the selected red drop-out region (figure 4("D_{RNEW}") of Ide) with base density pixels (column 5, lines 7-13 of Ide), which is the operation of a filter. Therefore, said means for selecting the specific wavelength band includes a filter.

7. Claims 10 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima (US Patent 4,926,253) in view of Ide (US Patent 5,841,899) and Dial (US Patent 5,537,211).

Regarding claim 10: Nakashima discloses an image scanning method comprising the step of, when an original to be scanned is illuminated and reflected light from the original is detected to scan an original image, recording as an offset value the detection value of reflected light intensity when environmental light (figure 1(1) of Nakashima) is applied to the original (figure 5; column 4, lines 11-18 of Nakashima). There is an

offset between the amount of reflected light when a fluorescent lamp (figure 1(1) of Nakashima), which is a form of environmental lighting, is used and the amount of reflected light when both said fluorescent lamp and the LED array (figure 1(2) of Nakashima) are used (figure 5 and column 7, lines 34-41 of Nakashima), which is calculated by the light quantity ratio detecting circuit (figure 1(12) of Nakashima) (column 4, lines 11-18 of Nakashima).

Nakashima further discloses applying light of an exclusive light source having a light intensity in a specific wavelength band (column 3, lines 64-65 of Nakashima). If two light sources have different spectral characteristics (column 3, lines 64-65 of Nakashima), then said light source clearly have specific wavelength bands. If said light sources did not have specific wavelength bands, then said light sources could not have different spectral characteristics.

Nakashima further discloses calculating a residual detection value (column 7, lines 34-41 of Nakashima) obtained by subtracting the offset value from the detection value of the reflected light intensity when the light of the exclusive light source is applied (figure 5 and column 7, lines 42-51 of Nakashima). There is a difference in the signal level obtained through illumination by the fluorescent lamp and the LED array and the signal level obtained through illumination by the fluorescent lamp alone (column 7, lines 34-41 of Nakashima). This difference is used to separate the colors by using the different signal level curves and establishing a threshold for said curves (figure 5 and column 7, lines 42-51 of Nakashima).

Nakashima further discloses performing binary processing of regarding as white color a portion of the original where the

residual detection value is higher than a reference value and regarding as black color a portion of the original where the residual detection value is smaller than the reference value (figure 4a and column 7, lines 2-6 of Nakashima).

Nakashima does not disclose expressly selecting said specific wavelength band, wherein said specific wavelength band is coexistive with or within a wavelength band of a portion of the original to be dropped out, whereby the reflectivity at said wavelength band of the portion to be dropped out is high.

Ide discloses selecting a specific wavelength band (figure 3("RED DROP-OUT IMAGE: D_{RORG}") and column 5, lines 7-13 of Ide), wherein said specific wavelength band is coexistive with or within a wavelength band of a portion of the original to be dropped out (figure 3 and figure 4 of Ide), whereby the reflectivity at said wavelength band of the portion to be dropped out (column 4, lines 11-18 of Ide) is high. The red field elimination image production unit (figure 1A(31) of Ide) selects for drop-out and eliminates the wavelength band corresponding to the red drop-out image (column 5, lines 7-13 of Ide). An example of the wavelength band for the red drop-out image is shown in figure 3 of Ide under the label "D_{RORG}" and, after displacement correction (column 5, lines 1-6 of Ide), in figure 4 of Ide under the label "D_{RNEW}". Since said drop-out color is with or within a wavelength band of the portion to be dropped out (figure 3 and figure 4 of Ide), the reflectivity of said portion is high compared with an unspecific wavelength band. As is old and well known in the art, a portion of an image with a specific wavelength band reflects less light the further away the frequency of said light is from said specific wavelength band. Therefore, an unspecific wavelength band will

have a lower reflectivity than said specific wavelength band of said portion on account of the frequency portions that are distant from said specific wavelength band.

Nakashima and Ide are combinable because they are from the same field of endeavor, namely image scanning and image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the means for selecting a specific wavelength band in order to process a drop-out color, as taught by Ide. The motivation for doing so would have been to pick up an image of an object having a specific color (column 1, lines 61-63 of Ide). Therefore, it would have been obvious to combine Ide with Nakashima.

Nakashima in view of Ide does not disclose expressly that said specific wavelength band is selected based on detected wavelength reflectivity characteristics of the original.

Dial discloses selecting a specific wavelength band based on the detected wavelength reflectivity characteristics of the original medium (column 10, lines 18-25 of Dial).

Nakashima in view of Ide is combinable with Dial because they are from similar problem solving areas, namely selectively setting filters based on the physical medium that is optically scanned. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to filter the light, and thus select the specific wavelength band, as taught by Ide, based on the detected wavelength reflectivity characteristics of the original medium, as taught by Dial, said original medium being the original document taught by Nakashima in view of Ide. The motivation for doing so would have been to obtain a useful match of colors for the optical processing that is performed (column 10, lines 22-25 of Dial). Therefore, it

would have been obvious to combine Dial with Nakashima in view of Ide to obtain the invention as specified in claim 10.

Regarding claims 14 and 16: Nakashima discloses that the light intensity of the specific wavelength band (red LED) is higher than a light intensity of the exclusive light source in an unspecific wavelength band (red LED with fluorescent lamp) (figure 4a; figure 4b; and column 7, lines 15-19 of Nakashima).

Further regarding claim 15: Ide teaches that the pixel values of the selected red drop-out region (figure 4("D_{RNEW}") of Ide) are replaced with base density pixels (column 5, lines 7-13 of Ide), which is the operation of a filter. Therefore, a filter selects the specific wavelength band.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

22 November 2005

James A. Thompson
Examiner
Art Unit 2624

THOMAS D. LEE